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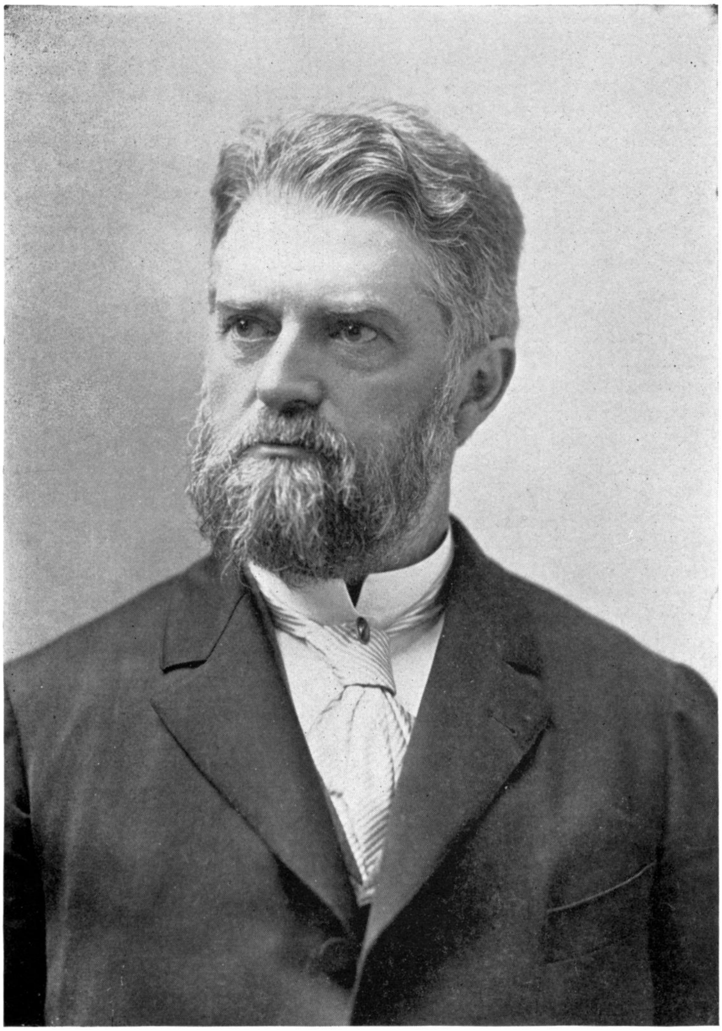

Simon Newcomb.

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SIMON NEWCOMB.

By R. G. Aitken.

That by the death of Simon Newcomb on the 11th of July, 1909, America lost her foremost astronomer, if not her foremost man of science, is universally acknowledged. We may, indeed, say with confidence that Professor Newcomb, for the past thirty years, ranked as one of the two or three greatest astronomers, not only of America, but of the world. It is a matter of satisfaction to recall that our Society brought this fact into prominence more than ten years ago.

In the autumn of 1897 letters were addressed by our secretary to the directors of the Berlin, Greenwich, and Paris observatories in Europe, and of the Harvard, Lick, and Yerkes observatories in this country, asking them to assist us in carrying out the statutes for the award of the Bruce Medal by nominating not more than three persons each who, in their judgment, were entitled to receive the medal[1] "for distinguished services to astronomy."

The statutes for the award of this medal, wisely adopted by Miss Bruce at Professor Holden's suggestion, provide that the medal can be awarded by the Directors of our Society only to persons thus nominated by the heads of six of the great observatories of the world, and I think I am betraying no confidence when I say that the Directors of the Society, so far, have conferred the medal upon that astronomer whose name was most prominent on these nominating lists.

Therefore, as Mr. William Alvord, President of the Society, in his address on awarding the first Bruce Medal, said, " . . . it will be perfectly clear that the recipient must have endeared himself, in a scientific sense, to the astronomers of the world." I cannot do better than to quote further from this address: "Not only will this also be true of each subsequent bestowal of the medal, but such a condition must especially mark this first presentation, since, according to the desires of Miss BRUCE, the medal is to be 'international in character, and may be awarded to citizens of any country and to persons of either sex.' It must strike us, then, with peculiar force that of all the names of living astronomers that have been so brilliantly connected with the wonderful advances in astronomical research during the past half-century, with all the manifold branches of observational work, mathematical investigation, spectroscopic and photographic study, in which to seek out a worthy exponent for this distinction, one name stood forward so prominently in the communications from heads of six leading observatories of the world, that the Directors of this Society could but set the seal of their approval upon the verdict of his peers, and award the first Bruce Medal to SIMON NEWCOMB."

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[1] For the year 1898, the first award.

It is not my purpose to write a formal sketch of Professor NEWCOMB's life. The salient features of his career may be gathered from any one of the numerous notices that have been printed since his death, or from the address[1] from which I have just quoted. And any readers who desire a more complete account than these articles provide cannot do better than to read his "Reminiscences of an Astronomer," in which he has given us not only an excellent autobiography but also many interesting sidelights on the history of astronomy in this country.

I do, however, desire to dwell upon certain features of his career that seem to me worthy to be strongly emphasized, particularly the great services he rendered to astronomy outside of his technical contributions and researches, and, in this connection, to bring again to your attention the important relation in which he stood to the Lick Observatory in its early history.

It was in the summer of 1874 that Mr. D. O. MILLS, President of the first Board of Lick Trustees, visited Washington to consult with the astronomers there, especially Professor NEWCOMB, concerning the proposed Lick telescope. As always in such matters, NEWCOMB took the greatest interest in this new foundation, and gave the best advice in his power. Among other things, he suggested at that time that Professor HOLDEN would be well qualified to serve as director, and we have the authority of both men for saying that sketches of the plans of the observatory were drawn by them in that year. The plans finally adopted did not differ in material points from these early sketches.

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[1] See these *Publications*, **10**, 49, 1898.

In 1875, Professor NEWCOMB visited Europe for the Lick trustees "with a view of determining whether there was any chance of getting the telescope made abroad."

The report was not very encouraging, and when Mr. LICK'S death left the third Board of Trustees free to act as they deemed best, the contract for the lenses was awarded, as is known, to the CLARKS. It is certain that NEWCOMB strongly favored this, and also that his advice weighed heavily in the decision to build a refracting telescope rather than a reflector. In 1876 Captain FLOYD, chairman of the third Board of Trustees, visited him; in 1879 FLOYD and FRASER, superintendent of construction of the observatory, consulted him in Washington; in September of that year he spent several days on Mount Hamilton, while BURNHAM was engaged, at the recommendation of both NEWCOMB and HOLDEN, in testing the atmospheric conditions there. It was in the autumn of the same year that the preliminary plans for the building were drawn at Washington under the joint direction of these two astronomers in NEWCOMB'S office. In 1885 he was again consulted, this time "on the question of choosing Professor HOLDEN as president of the University" of California; and in 1887 he was invited to go with Captain FLOYD to Cleveland "to inspect the telescope, which was now nearly ready for delivery."

I think it is clear from these facts that Professor NEWCOMB'S advice and recommendations were most potent factors in shaping the policy of the Lick Trustees, not only in the matter of buildings and equipment, but in the far more important matter of selecting the man who was to plan and direct the scientific work of the new observatory. To the close of his life Professor NEWCOMB continued to take the keenest interest in the work of the Lick Observatory, and stood ready at all times to aid its successive directors in every way in his power.

This little history furnishes an excellent example of what I mean by the influence Professor NEWCOMB exerted upon the progress of astronomy in this country during the half-century of his active career.

His official position, his eminence as an investigator, his practicality and sound common sense, and his forceful personality combined to give to all of his opinions the greatest weight. He was of course very influential in securing the powerful equipment of the Naval Observatory, and he was one of the chief advisers to the National Government in the development of several of the scientific bureaus at Washington. It is well known, also, that he was freely consulted by the astronomers of this country not only, but by those of Europe as well, on many of the important projects that have advanced our science during his lifetime.

Now we find him one of the leading members of the international committee which, at Paris in 1896, adopted a uniform system of constants for use in the nautical almanacs and ephemerides of the world; again, as leader of the astronomical congress held in connection with the dedication of the Yerkes Observatory; then as first president (re-elected as long as he would serve) of the Astronomical and Astrophysical Society of America; as president of the International Congress of Arts and Sciences at St. Louis in 1904;—the list could be made almost as long as the list of his scientific memoirs or as that of the honorary degrees, medals, and other distinctions conferred upon him. In all of these capacities his qualities of leadership were strongly exerted to stimulate the broadest possible development of the science to which he was devoted and particularly to encourage the growth of that spirit of co-operation in large programs of work that now characterizes astronomy.

Nor was he less interested in promoting the work of individual astronomers of whose ability he was convinced, a fact to which several of the recently published notices of his life bear witness.

While thus doing what he could to advance the science of astronomy professionally, Professor NEWCOMB also realized the desirability of popularizing, in the best sense of the word, the advances of our knowledge of the universe. Too often it happens that the scientific investigator considers it beneath his dignity to write a popular article. In many other cases the able student is not qualified to present the results of his work in non-technical language. But NEWCOMB added to the power of clear thinking the faculty of lucid expression, and he cheerfully devoted these powers to the task of writing books and magazine articles in which the latest results of astronomical research were made clearly intelligible and even fascinating to the general reader. Through these writings and his numerous lectures and addresses he exerted an influence on the progress of astronomy that is incalculable. When one considers the enormous amount of labor involved in the extensive technical investigations which he conducted, one must wonder how he found time for all of these additional activities. It is obvious that he could only do so because, in addition to his genius as a mathematician and astronomer, he possessed in an unusual degree the power of continuous work.

As a general rule a man who would carry a great piece of research work to completion must take as his motto, "This one thing I do," and must decline to undertake any other serious duties. So far as his professional labors were concerned, Professor NEWCOMB, too, adopted this motto, at least in spirit, for he steadfastly refused to be turned away from the life task he had chosen by any offer, however tempting, of work in other lines.

It is not necessary at this time to review this great work, which amounted practically to a complete revision and rediscussion of all the data of gravitational astronomy. It has been dealt with in part in the Bruce Medal address, already quoted, and more fully in a recent article in *Science*[1] by Dr. G. W. HILL, who was Professor NEWCOMB'S associate in a considerable part of it, and who of all living men is perhaps best fitted to estimate its importance.

It is a pleasure to think that Professor NEWCOMB had the satisfaction of rounding out his work by the completion of his final memoir on the Moon's motion. His unfaltering loyalty and indomitable will and courage kept him at his work to the closing hours of his life, and only a few weeks before the end came the final pages were written.

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[1] *Science*, **30**, 353, (Sept. 17, 1909).

It is gratifying, too, to think that, so far at least as the scientific world is concerned, his great services were adequately recognized and honored during his lifetime.

September, 1909.

THE RETURN OF HALLEY'S COMET.

By W. W. Campbell.

A celestial event of unusual interest is expected soon—the return of Halley's Comet. Its appearance will be welcomed as the coming of a faithful friend, whose visits to the Sun's domains have repeated themselves once every seventy-seven years since long before the time of Christ. Any day may bring the news that this object has been re-discovered, near the northern edge of the constellation *Orion;* but we are really not expecting the announcement until the last third of 1909. The comet will be faint when first seen, for we know quite closely where to look, and the most powerful photographic telescopes in several countries are periodically "prospecting" the critical region.

Why is this comet known as Halley's? The incidents connected with its christening form an interesting chapter in the early history of astronomy. A brilliant comet appeared in 1682, when Halley was a young man, in England. This was Halley's Comet, but his name was not connected with it until much later, as we shall explain. Halley's friend, the great Sir Isaac Newton, had but recently (about 1670-80) discovered the law of gravitation, and had proved that a comet or other body completely subject to the Sun's attraction must move in an ellipse around the Sun. Newton was of a retiring disposition and took no steps to make known his immortal discoveries. Halley, on the contrary, was a man of action. These characteristics of the two men are apparent from their portraits. The manuscript copy of Newton's *Principia* was entrusted to Halley, and the latter, in the absence of other funds available for the purpose, published the book in 1686, at his own expense, though he was a man of small financial